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ABSTRACT

This paper reports on a study undertaken to investigate the relationship between elicited imitation data and comprehension data, as measured by a picture-identification task and a second language (L2) to first language (L1) translation task, and between elicited imitation data and production data, as measured by a spontaneous production task and an L1 to L2 translation task. The subjects were native English-speaking children attending a French immersion program in grades 1 and 2. Generally speaking, the results suggest that elicited imitation data represent a conservative estimate of second language comprehension skills and a non-conservative estimate of second language production skills. Differences in performance between good learners and poor learners on the tasks are unaccounted for on the basis of sex, age, or exposure to the second language. The errors made by the children are categorized and discussed within Selinker's (1972) interlanguage framework. A model which allows for the interpretation of elicited imitation data is presented, and it is noted that accurate interpretation of these data are dependent upon the location in the model sentence of the syntactic structure being investigated, the number of test items employed, and the length of the model sentence. (Author/CLK)

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The Use of Elicited Imitation in Second Language Acquisition Research

Neil Naiman

ABSTRACT

This paper reports on a study undertaken to investigate the relationship between elicited imitation data and comprehension data (as measured by a picture-identification task, and an L_2 to L_1 translation task), and between elicited imitation data and production data (as measured by a spontaneous production task, and an L_1 to L_2 translation task). The Ss were native English-speaking children attending a French immersion program at the grades 1 and 2 levels. Generally speaking, the results suggest that elicited imitation data represent a conservative estimate of second language comprehension skills and a non-conservative estimate of second language production skills.

Differences in performance between "good" learners and "poor" learners on the tasks are unaccounted for on the basis of sex, age, or exposure to the second language.

The errors made by the children are categorized and discussed within Selinker's (1972) interlanguage framework.

A model which allows for the interpretation of elicited imitation data is presented, and it is noted that accurate interpretation of these data are dependent upon the location in the model sentence of the syntactic structure being investigated, the number of test items employed, and the length of the model sentence.

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The Use of Elicited Imitation in Second Language Acquisition Research[1]

Neil Naiman

Introduction

Research in second language acquisiton has changed drastically in the past few years as theorists have begun to apply some of the findings and techniques of psycholinguistics to the second language situation. For too long naive and often incorrect adaptations of psychological positions were applied to second language learning (e.g., cognitive-code vs. audiolingual habit theory). In addition, researchers were content to look at second language acquisition from the standpoint of teaching while totally ignoring the learner. Success of teaching programs were incorrectly assumed to validate learning theories on which the methods were loosely based. What was lacking were studies attempting to examine the learning processes of individual students while acquiring a second language.

By studying the acquisition of a second language by children, an attempt could be made to apply some of the theories of native language acquisition. The acquisition of a second language must to some degree filter through a person's knowledge of his first language. It is unlikely that the strategies whereby someone successfully acquires a second language are unrelated to those used in acquiring a first language (Corder, 1967).

Immersion programs in which young children are placed in classes where only a second language is spoken afford an excellent opportunity to study the acquisition of a second language by young children who have not fully completed the acquisition of their native language. The second language environment provided for these children, though not as natural as the home or street, is far removed from the highly structured and formalized language classes in school, and therefore, more similar in many ways to those environments in which children acquire their native language.

In mapping the acquisition of L_2 by these children, the greatest difficulty arises in finding adequate means for assessing their competence in the second language. Some of the most valuable data in native language acquisition have

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been collected by taping spontaneous speech of children. However, the amount of data that must be collected and analyzed is vast, and yet given all these data, an exhaustive account of the child's competence can still not be achieved. Children will go to great lengths not to spontaneously use a structure with which they are having difficulty. In addition, if comprehension does indeed precede production (Fraser, Bellugi & Brown, 1963), spontaneous production will not give a complete picture of the child's grammar.

What is needed to attain a more accurate account of a child's underlying grammar are experimental techniques that will provide information about comprehension as well as allow us to control the child's linguistic output. A method that has recently been used by several experimenters (e.g., Slobin & Welsh, 1973) is that of "elicited imitation".

Elicited Imitation

It is first necessary to distinguish between spontaneous and elicited imitation. When a child imitates what is spoken to him naturally, without being requested to do so, his repetition of this utterance is referred to as spontaneous imitation. On the other hand, when a child is deliberately asked by a parent or experimenter to repeat a selected utterance, his repetition is called elicited imitation.

In the literature, there are two schools of thought regarding the nature of elicited imitation. There are those who believe that correct imitation does not necessarily indicate comprehension of the linguistic structure exemplified in the model sentence. To these researchers, imitation is strictly a perceptual-motor skill. The others believe that accurate imitation involves at minimum a comprehension of the linguistic structures that are present in the sentence. It is the latter, consequently, who see the utility of imitation as an experimental means to study the child's linguistic system.

Recently, much criticism has been applied to proponents of the former school (e.g., Fraser et al. (1963), Lovell & Dixon (1967)) both in terms of the scoring procedures used in their tasks, and because the sentences they gave the children to imitate were in fact short enough so that correct imitation could have been achieved through strict rote repetition without a need for processing of the syntactic structures involved.

Ervin-Tripp (1970) and many others now believe that in order for a child to imitate a sentence which is beyond his immediate memory span, he must be able to comprehend the grammatical structures present in the model sentence. In order to repeat the sentence, once he has comprehended it, a child must then encode the utterance according to his own grammatical system. The production system he uses for the encoding of the repetition may be identical to or at variance with the one that was exemplified in the model sentence.

In encoding the imitations the child must use the rules of his own production system -- the rules that he would use when producing language spontaneously. If this is the case, then the child's elicited imitations should in many respects closely approximate the speech which he spontaneously produces. It may be that the rules present in the child's production system may be less developed or even qualitatively different than those in his comprehension grammar, and it is through his elicited imitations that this lack of agreement between the two systems may be demonstrated.

There have been several studies which have provided evidence that children will encode imitations according to their own production systems, even if this system is at variance with the rules exemplified in the model sentences. Labov & Cohen (1967) found evidence of this type with speakers of Black English, and Jordan & Robinson (1972) obtained similar results with British children. In the latter study, it was demonstrated that middle-class British children changed model sentences for imitation given in the "restricted code" into identical sentences in the "elaborated code". But both groups imitated the codes of their respective classes with a high degree of accuracy.

Other researchers (e.g., Slobin & Welsh, 1973; Clay, 1970; Smith, 1970) argue convincingly for the use of imitation to tap language competence. Menyuk (1969) has also used imitation as a research tool for substantiating the data she accumulated from spontaneous productions. For the most part, she found that children were only able to imitate structures they could spontaneously produce. However, sometimes when children imitated structures they did not spontaneously produce, these same structures were found to be present in the production of children somewhat more advanced linguistically.

In other words, she believed that these structures were in the process of being acquired in the children's production system, and the extra memory aid of having the structures present in the model sentence to be imitated allowed the child to imitate the structure correctly. These results coincide with those found by Bloom et al (forthcoming) for spontaneous imitations. They found that children could spontaneously imitate those structures they knew or were in the process of acquiring. Therefore, the limitations on the process of imitation appear to be similar whether these imitations are spontaneous or elicited.

The following statement made by Slobin (1973a) in his introduction to the chapter examining studies of imitation and comprehension aptly summarizes the present position on elicited imitation:

> Thus one cannot conclude with Fraser and Brown that "imitation is a perceptual-motor skill" not dependent on comprehension. This is true only of some imitation. Children may rote imitate sentences without understanding -- but within clearly defined limits of length and complexity. However, they also tend to reduce sentences in imitation to their level of ability -- often revealing comprehension which goes beyond the evidence of their spontaneous speech.
> (p. 464)

Imitation and Second Language Learning

By using imitation with young children in the process of learning a second language, one would be able to collect controlled and useful data on the linguistic system of the child, both comprehension and production in the second language. Data of this type would be indispensible to theorists interested in building and verifying theories of second language acquisition. If the sentences to be imitated have been systematically selected, the children's repetitions would provide data for the description of the language system of the second language learner. Furthermore, these imitations would furnish many examples of language errors committed by children during repetition; and, as many believe, language errors are among the most relevant data for theory-building in second language acquisition research (Corder, 1967). These errors are indicative of the systematic attempts and strategies the children are making in attempting to acquire the second language.

A child may evidence through his incorrect but consistent imitation of certain syntactic structures that he has alternative rules in his production system that do not wholly correspond to those in his comprehension grammar.

For example, a child may understand the past tense of a French verb, but when he attempts to use a past tense in French, he consistently constructs a verb form which does not conform to the French model. Examples such as these will provide insight into the relationship between the comprehension and production grammars. Through data obtained using imitation, one might be able to see whether the lag that supposedly exists between comprehension and production in native language acquisition also holds true for second language acquisition.

There are also other reasons why experimentation with young second language learners may be extremely useful for examining the relationship between comprehension and production through imitation. When using second language learners, more correlates of comprehension and production can be examined than in the native language situation. As well as being able to use the common experimental techniques for assessing comprehension and production in the native language, it is possible to use additional techniques for examining L_2 competence. Translation L_2-L_1 of certain syntactic structures embedded in sentences indicates some measure of comprehension of the L_2 structure; translation of the structure from L_1-L_2 must certainly be related to production of L_2.

The validity of using imitation as a research tool in second language acquisition research with children was examinied over several months of pilot testing with children in Grade 1 of a French immersion program. These children had great difficulty both in translation and imitation of several French syntactic structures which did not follow a Subject-Verb-Object (SVO) word order and/or were at variance with those of English in terms of word order. Examples of these structures were the indirect and direct object pronouns and the noun-adjective sequence.

The children performed best on comprehension (translation L_2-L_1), followed by imitation, followed by production (translation L_1-L_2) when they were given supra-memory span sentences containing chosen syntactic structures. These data seem to support the theory that imitation is a more difficult task than comprehension, and does not involve simply a perceptual-motor skill. Imitation involved an ability to both decode (interpret) and encode (produce) the structures of the second language.

Based on these encouraging results, the present study was designed to examine the utility of elicited imitation as a research tool for tapping the competence of young second language learners. Furthermore, in so doing

much could also be learned about the nature of processing in imitation and the relationship of imitation to both comprehension and production.

METHOD

Subjects

The Ss for the study were 56 Grade 1 and 56 Grade 2 children randomly chosen from Ottawa-area French immersion programs. These children were native speakers of English, but had been receiving all instruction in French from French-speaking teachers since the beginning of kindergarten. In immersion programs of this type, very little formal second language teaching, as is known in the higher grades, has transpired. The teacher speaks only French to the children, and they are asked to attempt to speak French to her. At the beginning of the program they are only encouraged to speak French amongst themselves, but by the middle of Grade 1 the children seem to be conversing in French quite naturally amongst themselves. There were an equal number of males and females selected for both grades.

Materials

Each testing session consisted of three tests, one each for a) imitation, b) comprehension and c) production. The model sentences used were 15 syllables long in French (based on the result of pilot testing). Each of the subtests consisted of 12 sentences containing three examples of each of the following four syntactic structures: direct and indirect objects, before and after the verb. The positions of these structures in the sentences were arranged so that each structure appeared once in each of the beginning (syllables 1-5), middle (6-10) and end (11-15) parts of the sentence. This was done to discover the effect of sentence position on performance for the imitation task. The following are examples of the test sentences with the structures placed in the beginning positions: (See Appendix for list of all test sentences.)

1) Indirect object before the verb:
   La grosse fille lui donne quelques pommes et des poires après souper.

2) Indirect object after the verb:
   Elle donne à notre chien brun beaucoup de biscuits pour son dîner.

3) Direct object before the verb:
   Mon frère les a vus sur la table brune après le déjeuner.

4) Direct object after the verb:
   Elle a mis une pomme verte dans son sac ce matin pour Marie.

The word order variable may have been confounded with part of speech, since in French, objects preceding are always pronouns, and objects following always nouns. To check for this possibility, four control sentences that were ungrammatical in French were constructed, two each to be given on the comprehension and imitation tasks: indirect and direct object pronouns following the verb, and indirect and direct object nouns preceding the verb. For example: Mon frère montre lui une balle rouge dans la rue près de notre maison.

There were four sets of test sentences, with the last two forms being rearrangements of the sentences in the first two forms, all forms containing lexemes known to the children. There were also English translations of the forms for use on the production task. The sentences were judged as acceptable by both native speakers of French and English.

For comprehension, there was also a picture-identification task. Three pictures were drawn for every test sentence (the same sentences as were on the translation task); one picture depicted the correct illustration of the sentence, one was a correct illustration of the sentence except for the relevant syntactic structure, and the third was a neutral illustration. For example, if the model sentence contained the structure "lui" as in the sentence "Le garçon lui donne le livre", the correct picture would depict a boy giving another boy a book; the second picture would show the same boy giving several other boys a book; and the third picture would show the same boy just holding out a book.

On the spontaneous production task, the Ss were shown the pictures used for the comprehension task and asked to talk about the relevant picture (the one corresponding to the model sentence) in terms of how it differed from the other two. E attempted to elicit the relevant syntactic structure from the child.

The sentences also contained 12 descriptive adjectives, one in each sentence. Six of the sequences were of the noun-adjective order, and six of the adjective-noun order. The adjectives were equally placed in the beginning, middle and end parts of the sentence. For the imitation and comprehension subtest, two examples of the adjective-noun sequence and two examples of the noun-adjective sequence in each set of 12 sentences were inverted. This was done to check whether the children would imitate and translate these inverted sequences in the correct or inverted order.

Of the 12 sentences in each form, four sentences contained verb forms

in the passé composé. The other eight sentences were in the present tense.

A digit span test with random sequences of digits increasing from three to eight was used. Two examples of each length were given to the child until two successive errors were made. All the test sentences and the digit span test were recorded on tape.

Procedure

The 56 Ss of each grade were assigned randomly to one of the four experimental groups. The four groups each received a different combination of subtests and/or instructions on how to perform the various tasks. This design was necessitated by a desire to answer the following questions:

1) Is there a difference in performance on the imitation task dependent upon the presence of a warm-up condition with corrections, as compared to a warm-up condition with no corrections?

2) Is there a difference in performance on both the imitation and comprehension tasks dependent upon whether S knows before the sentence is presented, or after it is presented, whether his task will be to imitate or comprehend?

3) Is there a difference in the results obtained for comprehension between the picture-identification task and the translation task?

For Ss of all groups, E would take S into a small room and tell him that they would be playing some games together in French. For all tasks E would give S two practice items himself and then two practice items on the tape recorder. For the imitation task E would say:

> I am going to say a sentence in French two times. What I would like you to do is say exactly what I said.

For the translation tasks E would say:

> I am going to say a sentence in French/English two times. What I would like you to do is say the same thing as the sentence says except say it in English/French.

Instructions were similar for the picture-identification task. They were modified when the practice items were on the tape recorder to:

> The voice on the tape recorder is going to say a sentence in French two times and what I would like you to do is say exactly what the voice on the tape recorder said.

After the completion of the three subtests, E told S that he had two simple short games to play and both of them were in English. E then gave S two of the translated model sentences to repeat in English (those that contained examples of the direct and indirect object pronouns in the middle position). Comparisons were later made between performance on the English and

French pronouns. Finally, the digit span test was given to the children. E thanked S and told him that he hoped that he had enjoyed the games.

An outline of the task requirements for the four groups can be found in Table 1.

TABLE 1

Outline of the Task Requirements for the Four Groups

Group	Comprehension	Imitation	Production
1.	L_2-L_1 (know before the sentence is given which task they are to perform)	L_2-L_2	L_1-L_2
2.	L_2-L_1 (don't know until after the sentence is given which task they are to perform)	L_2-L_2	Pictures-L_2
3.	L_2-Pictures	L_2-L_2 (warm-up with correction)	L_1-L_2
4.	L_2-L_1	L_2-L_2 (warm-up with no correction)	L_1-L_2

The following are the individual task requirements for the four groups:

Group 1: E explained to S that before he would hear the sentences he would be told whether he was to imitate or translate. If he was to imitate E would say "en français" before the sentence was given; if S was to translate (L_2-L_1), E would then say "in English" before S heard the sentence. For production, Ss of Group 1 were to translate L_1-L_2. The order of the tasks was counterbalanced across Ss, while the order of the sentences within each task though randomly arranged was held constant.

Group 2: In this group Ss were told whether they were to imitate or translate the sentences after they heard the model sentence. The test sentences used for these Ss were the same as the ones used for Ss of Group 1. The production task for these Ss was the spontaneous production task using the test pictures. The order of the tasks was again counterbalanced.

Group 3: For this group, E pointed out the mistakes S made on the practice items for the imitation task. S had to imitate the sentence to a maximum of three times if there were still errors on imitation on the practice items. This condition was included to test the assumption that S do indeed understand the nature of the imitation task, and that subsequently the distortions of the model sentences which they imitate are for the most part unconscious on the part of the Ss. For these Ss, the comprehension task was picture-identification, while the production task was translation L_1-L_2. The order of the three tasks was again counterbalanced, with imitation, however, always being the second task.

Group 4: For Ss of this group, there were no corrections on the practice items for imitation. Otherwise, the imitation and production tasks were identical to those used for Group 3. The comprehension task for this group was translation L_2-L_1. The order of the tasks was again counterbalanced with imitation, however, always being the second task.

Scoring

A criterion for scoring correct imitations and translations was established. A response was considered correct on the imitation task if the relevant syntactic structure was repeated perfectly by the student. Similarly, for the comprehension (L_2-L_1) and production (L_1-L_2) tasks, responses were considered correct only if the translation of the relevant syntactic structure was correctly given in the translated sentence.

On the comprehension task for Group 3 Ss a response was considered correct when S pointed to the appropriate picture. A correction factor for guessing was subtracted from the scores on the comprehension task.

For the spontaneous production task, it was impossible to differentiate whether the inability to produce the direct and indirect object pronouns was due to the inappropriateness of the task requirements or the absence of these syntactic structures in the grammars of the Ss. When the desired response included a pronoun object, S, for the most part, responded with a noun referent, perhaps because the referents were present in the pictures and could be described as "boys, girls" instead of "them, him". Because of this difficulty in interpreting these results, the data from Group 2 on the production task were left out in the initial analysis but were presented later in a descriptive fashion.

RESULTS AND DISCUSSION

Analyses

For the indirect and direct objects, the results were analyzed using a three way ANOVA with repeated measures on the last two factors (factor 1- group factor; factor 2- task; factor 3- syntactic structure). Because of the lack of systematic data for production for Group 2 Ss, analyses were done comparing performance on imitation and comprehension separately and imitation and production separately, thereby losing as little data as possible. To sort out the significant interactions between the factors, when they occurred, the Newman-Keuls procedure was used.

For the past tense factor, the results were analyzed using a two-way ANOVA with repeated measures on the second factor (factor 1- group; factor 2- task).

The results were analyzed for both Grade 1 and 2. Due to the limitations of space, these results will not be elaborated here in detail. They all conformed, however, to the theoretical position outlined above regarding the nature of the imitation task; for all syntactic structures, performance on comprehension was equal to or greater than performance on imitation which was equal to or greater than performance on production.

Qualitative differences between Ss of Grade 1 and 2 in terms of the relationships between imitation, comprehension and production for different syntactic structures were not as marked as were originally expected. It was felt, therefore, that a more useful criterion than grade level alone might be found for dividing the Ss, with the hope of discovering a clearer relationship between imitation (I), comprehension (C) and production (P) for the various syntactic structures. Also, since the group factor on the repeated measures ANOVA with Grade 1 and 2 Ss proved to be non-significant in both grades, it seemed justifiable to choose Ss of either grade regardless of their group membership for any subsequent rearrangement of Ss based on another criterion.

The criterion chosen was performance on the imitation task for the pronoun structures. The reasons for this choice were twofold. First, the criterion should in some way be based upon performance on the imitation task, since it is the relationship of this task to the two others that is of major concern in the present study. Second, from the results of the analyses with the Grade 1 and 2 Ss, it seemed that those who were able to imitate these two structures correctly were performing quite differently on the whole from

other Ss.

Based on this criterion, Ss were subsequently put into two groups. Ss scoring above the criterion were placed in Group A, those scoring below, in Group B. The makeup of the two groups can be found in Table 2.

TABLE 2

Composition of Groups A and B

	Total	M	F		Total	M	F
Group A				Group B			
Grade 1	n=15	6	9	Grade 1	n=25	14	11
Grade 2	19	8	11	Grade 2	22	14	8
	34	14	20		47	28	19

The same analyses that were carried out for the Grade 1 and 2 Ss were carried out for Ss of Group A and B (the ANOVAs now being two-way for objects, and one-way for tense -- the group factor no longer being relevant.)

Processing in Imitation.

There are many results in the present study which appear to substantiate the claim that in order for an individual to imitate accurately a syntactic structure embedded in a supra-memory span sentence, he must first decode (interpret) the sentence. This is a necessary but not a sufficient condition for accurate imitation.

For example, for none of the five syntactic structures tested (direct and indirect object nouns and pronouns, and past tense) was performance on the imitation task greater than performance on the comprehension task, for either Grade 1 or 2, Group A or B. In addition, a rank ordering was done for the performance of Ss with the four syntactic structures (direct and indirect objects) on both imitation and comprehension. This ordering (i.e., direct obj. noun > indirect obj. noun > direct obj. pronoun > indirect obj. pronoun) was the same for both imitation and comprehension, lending further support to the notion of similarity of processing.

Another result that supported this line of argument was based on the inter-group comparison between Ss of Group 1 and 2 for both Grade 1 and 2. Ss of Group 1 were given a combined imitation and comprehension task and were told by E before each sentence was presented to them whether it was their task

to comprehend (translate L_2-L_1) or imitate the sentence. Ss of Group 2 received the same combined task, but were not told whether they were to imitate or translate until after the sentence had been presented to them. If there were no differences in performance on either the imitation or comprehension tasks between Ss of Group 1 and 2, one might conclude that the differences in the task requirements were irrelevant, and that, therefore, the Ss were processing the sentences in the same way in Group 1 as in Group 2. In other words, it would make no difference if S knew whether he was to imitate or translate before or after he was presented with the sentence. If that were the case, the knowledge of whether he was to imitate or translate would not make a difference to the way Ss approached the processing of the sentence -- sentence processing was the same for imitation as it was for comprehension.

This, in fact, seemed to be the case. The results of t tests between Ss of Group 1 and 2 for both Grade 1 and 2 showed no significant difference in comprehension or in imitation for the two groups. However, differences certainly existed between performance on imitation and performance on comprehension for Ss of both these groups (comprehension was always better than imitation for Ss in both Group 1 and 2). This inferiority in performance on imitation could not have resulted from the initial processing or decoding stage, since it has just been demonstrated that initial processing for imitation is similar to that for comprehension. Then the differences in performance between imitation and comprehension must have been the result of the final or encoding stage of processing.

Several of the results of the present study substantiate the claim that the differences between imitation and comprehension are due to the final or encoding stage. If encoding in imitation draws on the production system of the child, then performance on a production task which is based on the production system of the child should not exceed performance on the imitation task. Performance on imitation, however, may occasionally exceed that on production, because the extra memory aid of having the correct structure present in the model sentences to be imitated allows S to imitate structures which are just emerging in their production system, structures they rarely are able to produce spontaneously. This hypothesis was confirmed for all the syntactic structures employed in the present study for Ss of both Grade 1 and 2, Group A and B.

That encoding in imitation was similar to encoding in production was also evident from the results that the rank-ordering of the structures in terms

of performance was the same for both imitation and production.

Language Errors

If encoding in imitation depended on the production system of the child, then when alternative rules are present in the production grammar (to those in the comprehension grammar), occasionally Ss should distort the imitations of the model sentences to conform to their own production system. If this is the case, then many of the distortions and systematic errors produced by Ss in imitation should be evident in their production of L_2 as well. Data obtained from the children's imitations and productions of similar errors which will now be presented will provide evidence supporting this point of view. In addition, the data will provide insights into the language system of the second language learner who is still in the early stages of second language acquisition.

These errors will be categorized under a schema provided by Selinker (1972). Selinker refers to the language spoken by those who have learned a second language as "interlanguage". This linguistic system is made up of speech output of second language learners as they attempt to systematically produce target language norms. This description of a linguistic system of second language learners which differs systematically from both the native and target languages is similar to Corder's description of "transitional competence" (1967) and Nemser's description of the "approximative system" (1969). Selinker attributes the errors made by second language speakers to five processes which he considers central to second language learning. These are-- strategies of second language learning, language transfer, strategies of communication, overgeneralization of linguistic material, and transfer of training. Though there are difficulties inherent in his description of these processes, they serve here as a useful schema to categorize errors that occurred in both imitation and translation.

1. Strategies of Second Language Learning: Errors resulting from this process are due to an identifiable approach by the learner to the material to be learned in the second language. In the present study, the errors committed by Ss on the past tense verb form can be described in this framework. In most instances when children were given a past tense verb for comprehension, these forms were correctly interpreted (translation L_2-L_1). However, when presented with a past tense verb form for imitation and production, the children frequently produced verb forms which they themselves created -- verb

forms which are non-existent as such in the French language.

Many of the children produced the same "incorrect" verb forms. This would lead one to believe that there are systematic strategies by which English-speaking children attempt to produce past tense verb forms in French. The examples listed below are indicative of the types of errors made. Below the two sections of examples there is an attempt to provide a strategy which may have been underlying the production of these forms.

he placed ——→ il a place

he gave ——→ il a donne

Strategy A - To express the notion of past in French, insert the prefix "a" before the third person present (standard form) of the main verb. This type of error occurred in 7.6% of the imitations of the past tense and in 11% of the productions.

he threw ——→ il lancé

he gave ——→ il donné

Strategy B - To express the notion of past in French, use the inflected form of the main verb (the past participle)-- no auxiliary is needed. This type of error occurred in 4.2% of the imitations of the past tense and in 3.3% of the productions.

The fact that more children seemed to be marking the past tense by a beginning of the word addition (prefix) than by an end of the word inflection (suffix)[1] does not coincide with one of Slobin's Language Acquisition Universals (1973b) that postpositions will be acquired before prepositions. In addition, it might have been expected that the postposition "é" would have been easier than the prefix because English most frequently forms its past tense using a suffix as well --i.e., "ed". The reasons why Strategy A seems to have been more common for these children is at present unknown. There is the possibility that some of Slobin's Language Acquisition Universals are inapplicable to the second language situation.

The number of children who committed the above errors in imitation and in production was noted. 75% of the children who imitated the past tense verb form with errors attributable to Strategy A, also produced similar errors on the production task. For errors attributable to Strategy B, 42% of the children who committed these mistakes on the imitation task also produced similar ones on the production task. These results again demonstrate the

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1. The correct formation of the past tense in French is a combination of both.

relationship between imitation and production.

2. Language Transfer: Errors due to this process are a result of the influence of the native language on the acquisition of L_2. This factor will be used to describe errors produced by the children on the object pronouns.

If S imitated or translated (L_1-L_2) the correct form of the direct or indirect object pronoun according to the SVO or English word order, such a response was scored as an "inversion". A separate analysis was then conducted called the "adjusted analysis" which considered these inversions as correct responses. On the original analysis, the relationship between tasks for the object pronouns was C>I>P[1], for Group A Ss, while the relationship was C>I, P for Group B Ss (scores on imitation and production both being very low).

However, when the adjusted scores were used to make allowance for the alternative form that existed in the production grammars of the children (the correct form but placed after the verb), the relationship changed. When the scores for Ss of Group A were composed of the combination of the correct and alternative forms (adjusted score), there was no difference in performance between comprehension, imitation and production (C•I•P). Therefore, the production grammars of many of these children contained both an alternative form in which the object followed the verb, and a new emerging form in which the object preceded.

For Group B Ss, the relationship was quite different -- i.e. C>P>I. The alternative form also existed in the production grammars of some of these children, but the correct form did not exist at all. On the production task, children were given more freedom to produce the alternative form than on the imitation task, which accounted for the superiority of production over imitation using the adjusted scores. In imitation, the children were constrained by the nature of the task to produce the form in the way it was presented to them, which was a form they did not have in their production grammars. On the other hand, on the production task, they were at liberty to use the alternative form, especially since this form conformed to the order given in the English sentence.

The interpretation that only the alternative form was contained in the production grammars of the Group B children was substantiated by the results of the control versus experimental sentences. Each control sentence

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1. = the same and correct
   > greater than, systematic relationship
   , no systematic relationship

was comparable in terms of syntactic structure and sentence position (beginning, middle or end) to one experimental sentence in the comprehension and imitation tasks. The control sentences differed from the experimental ones because, in the former, the word orders were ungrammatical in French --the direct and indirect object pronouns were placed after the verb. The McNemar test was used to assess the differences in Ss' performance between the control and comparable experimental sentences.

Children of Group A performed no differently on imitation of the correct or incorrect form, indicating once more that they probably possess both in their production grammars. However, Ss of Group B performed significantly better when the pronoun objects followed, rather than preceded the verb, $\chi^2 = 7.11$, $p < .01$. This again confirms the interpretation that these children possessed the alternative, not the correct form in their production grammars. In addition, only Ss of Group A spontaneously corrected the ungrammatical control sentences (normalizations) in imitation, while Ss of Group B did not.

Ss correctly imitated the pronoun objects in 14.6% of the examples, while they inverted them in 4.6% of the cases. On production, Ss produced the correct form of the pronoun objects in only 3.8% of the examples, while they inverted them in 18% of the cases. To demonstrate the relationship between the errors committed in imitation and those in production, the number of inversions produced on the production task by Ss who had already inverted the pronoun objects in imitation were noted. Of the Ss who produced inversions in their imitations, 69% also produced inversions in their productions.

3. Communication Strategy: Errors resulting from this process are due to an identifiable approach by the learner to communicate with speakers of the target language. In this case, although the teacher was a native French speaker, the peer classmates of the children were not. Children will attempt to convey or preserve meaning in any way possible, and many errors arise in their systematic attempt to do so in the second language. Three different kinds of errors produced by the children will be described in this section .

a) Vocabulary Substitution - In many cases children substituted words or phrases in imitation and in production which were not exactly equivalent to the words in the model sentences but were usually of the same semantic "category" or part of speech. The children wanted to convey meaning while

still preserving the overall integrity of the sentence. For example:

sous ⟶ derrière

quelques ⟶ beaucoup de

Also in imitation, many children also changed the words of the model sentence to alternate words that were approximately synonymous to the words of the model sentence. This again indicates that children must first interpret the sentence for imitation and then encode it according to their own production system (which included lexical items). Some examples are:

gros ⟶ grand, épais

frapper ⟶ pousser, battre

b) Gender - The Ss made very little distinction between "le" and "la" for use with masculine and feminine nouns in French. Similarly, not many children produced or imitated descriptive and possessive adjectives consistently to agree with the gender of the nouns they were modifying. These results might have been due to a communication strategy adopted by the children which allowed them to convey meaning in L_2 more easily. This might have been "Do not worry about the marking of gender agreement, especially when it is obvious what the gender is". For example , Ss imitated and produced:

le petite garçon

le grand soeur

Of all the noun forms and the adjectives which required gender marking, Ss imitated 27.4% of them incorrectly and produced incorrect markings in 34.8% of the cases on the production task. To ensure that there was a relationship between the way individual Ss imitated and produced gender markings, a correlation was calculated comparing each S's performance on imitation and on production in terms of the number of errors produced in gender marking. This correlation was significant, $r = .306$, $p < .01$.

To discover if there was a difference in the ability of Ss of Group A and those of Group B to mark gender correctly, t tests were calculated comparing the performance of the two groups on imitation and production. On the imitation task, Ss of Group A performed significantly better in gender marking than did Group B Ss, $t = 2.04$, $p < .05$. For production, even though the difference between the two groups was not significant, the mean number of correct responses for Group A Ss was again higher than for Group B Ss.

c) Indirect Object Pronouns - Many errors, in addition to inversions and omissions, were committed by S both in imitation and in production of the pronoun objects. It appears from the data that many children had alternative forms in their production systems for the two indirect objects "lui, leur". For example, "lui" was substituted with "il" or "elle", and "ils, elles" substituted for "leur" in many cases. Often when Ss used these incorrect forms, they placed them at the end of the sentence with the addition of the preposition "à" which is no doubt an influence from L_1. Errors similar to the following occurred both in imitation and production:

elle lance une pomme à il.

il a montré elle le manteau.

One possible explanation (another will be given in the next section) for the children's use of the nominative instead of the dative form is in terms of a communication strategy. The children might have known that the nominative forms were not appropriate, but they did not have the correct form in their production grammars as yet. Therefore, in order to convey meaning, and be understood, they chose to substitute the similar but incorrect nominative form.

4. Overgeneralization of Linguistic Material: Errors due to this process are a result of the overgeneralization of target language forms and rules. An alternative explanation for the errors produced with the indirect object pronouns will be based on this process.

The reason that the children may have produced the nominative forms "il,elle, ils, elles" instead of the correct dative forms "lui,leur" is that they did not know that these nominative forms were not appropriate for all cases. They had already acquired the French forms for "he, she and they", and may have been overgeneralizing the use of these forms to any case in which the third person form was required in French production.

More examples of overgeneralization of linguistic material occurred in the Ss' imitation and production of certain verb forms. Many children both imitated and produced the form "a metté" and "a mettré" instead of "a mis", due, no doubt, to the overgeneralization of the most common form of the past participle in French.

In addition, many children added the preposition "de" when using the form "quelques" to produce such phrases as "quelques de livres, quelques de pommes". This error may be explained by the children's overgeneralization of the French partitive (un peu de, beaucoup de) to include "quelques", even

though this was not appropriate.

5. Transfer of Training. Errors due to this process are a result of identifiable items in the training procedures of the children in the second language. Few errors of this kind were made because of the nature of the immersion classes where little specific language training occurs.

One interesting example, possibly due to this process was noted. Several children imitated the adjective "français" or translated the English adjective "French" into L_2 with the form "en français". For example:

my French friend ⟶ mon ami en français

Children were accustomed to hearing their teacher say "en français" when she wished them to restate in French what they had just said in English. The children may have extrapolated the former use of "en français" to a wider use which included its use as a translation of the English adjective "French".

Others errors occurred as well, but the above examples alone make it sufficiently clear that many of the distortions that were produced by Ss in production (spontaneous, translation L_1-L_2) were similar to the ones the children committed in imitation. Therefore, it appears that imitation can be used to tap the production system of the second language learner, even when this production grammar is different from the comprehension grammar. In addition, by compiling error data of this kind, grammars of L_2 learners at different stages of acquisition can be constructed. Data of this kind can also be used to verify or refute hypotheses concerning processes or strategies used by children acquiring a second language.

All these findings lead one to reject the view held by Fraser et al (1963) and others that imitation is only a perceptual-motor skill. Moreover, if this were the case, and a child's performance on an imitation task were dependent only upon his ability to repeat in a rote fashion, then there should have been a significant correlation between performance on imitation and performance on the test for memory span. However, the results of product-moment correlations between memory span and performance on imitation for Group A and B Ss showed only low correlations between the two tasks. Also, there were no significant correlations between performance on imitation and scores the children received on a test of IQ.

Description of Stages in Imitation

Based on the preceding findings and discussion, a number of propositions will be presented which attempt to describe the stages involved

in the imitation of a syntactic structure embedded in a supra-memory span sentence. However, two issues must first be dealt with which reflect directly on the description of these stages, the first dealing with the relationship between the comprehension and production grammars, the second with the influence of memory.

From the results of the present study, it appears that in second language acquisition, the comprehension grammar does not equal the production grammar. The data have shown that a structure must first be present in the comprehension grammar before entering the production grammar. In addition, the production grammar may contain different structures and rules than the comprehension grammar. These may result from the fact that the production grammar is influenced to a greater extent and for a longer period of time by the mother tongue than is the comprehension grammar.

Regarding the effect of memory, it is know that memory capacity to some extent influences processing on all three tasks -- imitation, comprehension and production. However, the formalization of quantitative or qualitative influences of memory on the various stages of sentence processing lies outside the framework of the present study. Nevertheless, it is still important to point out the importance of memory capacity in relation to some of the specific aspects of processing involved in the present study.

Children with below normal memory capacities may have had trouble on all three tasks, because they did not possess the memory capacity to adequately process the model sentences of the given length presented to them. Because the sentences were all beyond STM capacity, memory was involved in a deeper way, namely for holding chunks for adequate processing. The 15 French syllables in the model sentences may have overloaded STM more for some children than for others. Those children who were quite competent in L_2 may have been able to successfully chunk all the information present in the model sentences, while others, perhaps less competent, may have been swamped by the amount of information present in the sentence and were not able to chunk all of it.

The overall influence of memory factors was probably most pervasive on the imitation task. In imitation, adequate memory capacity is initially necessary for accurate interpretation of the sentence. Moreover, in order to subsequently repeat the sentence as it was given, the

children may have also had to store extra information about the "exact form" of the model sentence. For this reason, children with below normal memory capacities may have fared quite poorly on the imitation task.

Taking these factors into consideration, the following propositions will be offered as a description of the possible stages in processing which result in various outcomes on the imitation task:

1. If the child has sufficient STM capacity to chunk the sentence, and the structure is present in his comprehension grammar, then the appropriate lexical and syntactic processing may occur, resulting in accurate interpretation of the structure. Interpretation is the first necessary condition for accurate imitation. If the structure is not contained in the comprehension grammar, or STM capacity is insufficient, then the needed lexical and syntactic processing cannot occur and accurate comprehension will not result; correct imitation, consequently, would be impossible as well.

2. Once the children have successfully passed the interpretation stage, the resulting imitation will depend upon the next stage -- the encoding stage. Given sufficient memory capacity (memory necessarily interacts with processing at this stage as well), the results of encoding will depend upon the presence or absence of the structure in the child's production grammar. Depending upon this factor, the lexical and syntactic processing at this stage will produce one of these four possible results:

a) The structure is not present in the production grammar -- correct imitation will not occur.

b) An alternative form is present in the production grammar (sometimes this is an equivalent form to the given form, sometimes it is a form derived from L_1)-- an alternate form will often occur in imitation.

c) The structure is beginning to be stabilized in the production grammar -- accurate imitation will sometimes occur, and sometimes not. This variability will be related to memory factors.

d) The structure is present in the production grammar -- accurate imitation will occur.

Based on the above propositions and the preceding discussion the following relationships between imitation comprehension and production of a structure embedded in a supra-memory span sentence were offered.

1) $C \simeq I \neq P$[1]: The structure has been acquired for some time. It is firmly in the child's grammar so that he is able to comprehend, imitate, or produce the structure with approximately equal proficiency.

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1. $\simeq$ the same and correct
   $\neq$ the same but incorrect
   , no systematic relationship
   $>$ greater than with a systematic relationship

2) C,I,P: The structure in this case is totally beyond the child's capacity at this time, or the child does not possess the minimal memory capacity to be able to process the sentence, so that he is unable to comprehend, imitate or produce the structure.

3) C I≠P: The structure is comprehended by the child, but he has an alternative form in his production system. This alternative form is most likely an approximation to the correct form in the target language or a structure that is influnced by L_1. This alternative form will frequently appear in both the child's imitations and productions. Occasionally, it will occur more frequently in production than in imitation, because in production the children are given the freedom to produce this alternative form, while in imitation, they are instructed to repeat exactly the form given, a form for which they have an alternative in their own production system.

4) C?I,P: The structure has just emerged in the child's comprehension grammar. He is able to comprehend the structure, but because it is not yet in his production grammar, he is unable to produce it. Even with the structure present in the model sentence, the child is unable to imitate the structure correctly.

5) C?I?P: The structure has recently emerged in the child's grammar. It is present in his comprehension grammar so that he is able to comprehend the structure, but the structure is just beginning to emerge in the production grammar, and with the memory aid of having the structure present in the model sentence, he may occasionally be able to imitate it correctly.

6) C=I?P: The structure is already in the comprehension system, and is in the process of entering the production system. The child is able to comprehend the structure, and can produce it on the imitation task, because the memory aid of having the structure present in the model sentence allows him to overcome his usual inability to produce the structure from his own production system.

No other relationships could have been expected given the theoretical positions outlined above. As discussed earlier, imitation could not have been greater than comprehension, since the sentences were made sufficiently long that the ability to imitate the relevant structure must have been preceded by the proper interpretation of the structure. Furthermore, as previously indicated, production could not have exceeded comprehension. As anticipated, the results for all the syntactic structures in the present study did indeed fit into all the above categories.

Imitation as a Research Tool

From the results obtained, it appears that imitation can be used to assess the stage of acquisition of syntactic structures in the production system of the second language learner. However, it is necessary to include

more than one example of the specific structures to be examined. Results of imitation from one or two examples cannot provide sufficient information to indicate the stage of development.

The researcher must deal with other considerations before attempting to use elicited imitation experimentally. First, the position of the structure in the sentence must be considered. A one-way ANOVA with repeated measures was carried out to compare performance on the imitation task for the different sentence positions (beginning, middle, end). There was a significant difference among sentence positions, $F = 38.04$, $p < .001$, with the Newman-Keuls procedure indicating that the beginning position was significantly easier than the end position which was significantly easier than the middle position. Other researchers (Grossman & Scholes, 1971; Blasdell & Jensen, 1970) have found that young children imitated structures that occurred at the end of the sentence better than structures that were in other parts of the sentence. The reason that the beginning position as opposed to the end position was the easiest in the present experiment might be attributable to the fact that the sentences which resulted from placing the direct and indirect objects in the last five syllables, though still grammatical, often appeared a little awkward. Therefore, Ss may have had greater difficulty with sentences of this type. What is certain in any case, is that the position of the structure in the sentence is an important factor to consider before constructing sentences for an imitation task.

Second, it appears that the length of the sentences chosen for this experiment was just about right for these children; the length of sentences appeared to be longer than immediate memory span and yet not so long that they were too difficult for the children to process. It is always advisable, therefore, to pilot test the length of sentences to be used on an imitation task with children similar to those proposed for the main study.

Third, the results of t tests for both Grade 1 and 2 between Ss of Group 3 and 4 for performance on the imitation task showed no difference between the two groups. The two groups differed only in whether they received or did not receive correction on the warm-up for the imitation task. This indicated that providing extensive information and correction on the practice items for imitation was not necessary. It appears that, at least for children at the age examined in the present study, there is no misunderstanding regarding what is required of them on an imitation task.

Word Order

Throughout this paper the influence of the mother tongue on the second language in terms of word order has been demonstrated. As previously stated, it appears that Group B Ss possessed only the SVO order for pronouns in their production grammars, while Group A Ss possessed both the correct SOV order and the English influenced SVO order. It is also interesting to note that when performance on the experimental SVO noun sentences was compared with performance on the comparable ungrammatical SOV noun controls, different results emerged for the two groups. Ss of Group B performed better on the SVO noun sentences for both comprehension and imitation than on the ungrammatical SOV noun controls. Group A Ss, however, performed equally with the ungrammatical SOV noun controls as with the SVO structures. This might have been a result of the fact that Ss of Group A already possessed an SOV ordering for French (pronouns) and generalized the SOV word order to this instance, concluding that perhaps, this might be an acceptable structure in French as well.

Another explanation for this result may be that Group A Ss were able to imitate the "harder" ungrammatical sentences with less difficulty than were the others. As Smith (1970) explains, an incorrect sentence contains more material to process than does a correct sentence, for the child must disentangle the structure and the grammatical error (which must be considered a footnote to the structure); then he must store both the structure and the footnote, and then he must reproduce both the structure and the footnote. At each step of this process, the ungrammatical sentence presents more difficulty than does the grammatical one, given that the correct grammatical structure is known by the child. By performing similarly on both the ungrammatical and grammatical sentences, Ss of Group A were demonstrating their superior ability for processing in L_2 in general.

Other influences of word order will be discussed in the following section dealing with translation.

Translation

The translation tasks were used in the present study as a means of measuring second language comprehension (translation L_2-L_1) and production (translation L_1-L_2). The results of *t* tests comparing performance on comprehension between Ss of Group 3 (picture-identification) and Group 4 (translation L_2-L_1) showed that there was no significant difference in

performance for the two measures. Similarly, many of the language errors enumerated, demonstrated that Ss committed many of the same errors on the spontaneous production task as they did on the translation task. In addition, a recent study by Dumas and Swain (1973) showed that when young second language learners, similar to the ones studied here, were given English translations of their own French spontaneous production and asked to translate these utterances into French, their translations matched their original spontaneous productions in most cases.

All of the above results point to the fact that the use of translation as a measure of both comprehension and production was valid. However, caution must still be exercised in interpreting results when using a translation task. Little is known at the present time about the process of translation or the demands that this task makes upon children. Some of the results of the present study are encouraging for the future use of translation as a test for second language comprehension and production, but several reservations, in terms of the influence of word order, must be mentioned.

One must exercise caution in making conclusions based upon the use of a translation task for structures that vary in word order between the two languages. Yet, it is just cases such as these which provide clues about the influence of the mother tongue on processing in the second language. This has already been demonstrated for the pronoun objects, and will now be discussed for adjective word order, and the genitive.

Children might have found it easier to translate adjective-noun (a.-n.) as opposed to noun-adjective (n.-a.) French sequences into English if they were translating in a word-for-word fashion, because translating the adjective-noun sequence in this way would not have necessitated any change of word order in English. Similarly, if children were translating in a word-for-word fashion from English to French, they would have fared better with adjectives that followed the English adjective-noun sequences than with ones which they would have had to re-order when translating into French.

If Ss had overcome the word-for-word manner of translating, and if they were no longer influenced by the adjective-noun ordering of their mother tongue, then a more equal performance with the noun-adjective and adjective-noun orders for all three tasks should be evidenced. Such was the case for Group A Ss. They imitated the noun-adjective sequence correctly more often

than the adjective-noun one. They translated (L_2-L_1) more adjectives appropriately in the n.-a. order than cases in which they reversed these sequences to the a.-n. order. They also translated many more of the n.-a. structures correctly into English than cases in which they left them in the n.-a. word order of French. The results of a χ^2 test showed that Ss of Group A performed significantly better on the production task with the n.-a. sequences than did Group B Ss, χ^2 25.45, $p < .001$; for comprehension (translation L_2-L_1) and imitation, the differences in favour of Group A approached significance as well.

The genitive is expressed differently in French than it is in English. In English, the genitive is most frequently produced by the juxtaposition of "possessor-possessed" with an "apostrophe and s" added to the possessor. In French, the word order is exactly the opposite, with the expression being "possessed-possessor" with "de" inserted between the two. For example, "John's hat" becomes "le chapeau de Jean" in French. Rarely, is "le chapeau de Jean" expressed as "hat of John" in English.

However, on the comprehension task (translation L_2-L_1) in the present study, most children translated expressions such as "le chapeau de Jean" as the "hat of John" rather than "John's hat". This was probably due to the fact that children were translating L_2-L_1 in a word-for-word fashion, ignoring the fact that the resultant translation was not appropriate in their native langauge.

To discover if there were again differences in the performance of Group A and B Ss, percentages were calculated giving the number of correct translations (L_2-L_1) of the genitive out of the total number of examples given for each group. Group A Ss correctly translated the genitive in 21.3% of the cases, while Group B Ss were correct in only 7.8% of their translations. Ss of Group A produced the same number of correct translations as translations using the inappropriate "of" structure. However, Group B Ss produced almost three times as many "of" translations as correct translations.

A χ^2 test was calculated comparing the performance of Ss of Group A and B on the genitive structure including correct translations, translations using "of" constructions and incorrect responses. Ss of Group A performed significantly better than Group B Ss χ^2 19.45, $p < .001$.

Less errors were probably made in translation L_1-L_2 for the genitive than L_2-L_1, because in English the children had the ability to

chunk the genitive as a unit- i.e., possessor-possessed, and were able to translate this unit correctly into French. However, when given the phrase in French, it was processed by most of the Ss not as a unit, but rather as a string of French translations of English words, and was translated into English in this manner. This was less evident for Group A Ss than for Ss of Group B.

Group A vs. Group B

On the basis of the present results it appears that there existed something beyond grade level, age and length of exposure to L_2 which was underlying the difference in L_2 performance among the children (i.e., Grade 1 vs. Grade 2). When Ss were assigned to two Groups --Group A and B based on their performance on the imitation task for the pronoun objects, many differences in other performance measures and relationships among these measures were evidenced. On the basis of the results, Ss of Group A shall henceforth be referred to as "good" learners, while Ss of Group B shall be called the "poor" learners, for lack of more precise terms.

It appeared surprising at first, that there were fairly equal distributions of Ss of each Grade in the two Groups; but something other than grade level alone was contributing to the differences in performance between the two Groups. In terms of sex differences, there appeared to be a greater percentage of females in the good learners, and a greater percentage of males in the poor learners. However, the results of a χ^2 test show that this difference was not significant.

The results of a t test indicated that Group A Ss had a significantly higher IQ than Group B S, $t = 2.19$, $p < .05$. Yet IQ was not correlated to performance on any of the three tasks for Ss of Group A, and with only one measure of production for Group B Ss. There were no significant differences in scores for memory span between the two groups.

The good learners were chosen on the basis of their performance on the imitation task for pronoun objects. However, this measure seemed to be indicative of more than just performance on the imitation task. The good learners performed much better on comprehension and production (as well as imitation), than did the poor learners for all the syntactic structures.

The results indicated that for the good learners, the correct forms of the pronoun objects were beginning to emerge in their production grammars.

In addition, they also had in their production grammars, the alternative form in which the correct form was used but placed in the English word order.

However, the poor learners only had the alternative form in their production grammars. They performed better on production than on imitation when the "inversions" were considered correct responses. This was the case, because for imitation a constraint existed, due to the task requirements to produce a replica of the model sentence. The alternative form, the only one they possessed, was unacceptable due to the constraints of the task. In production, this constraint not only did not exist, but in fact, children were encouraged by the word order of the English model sentence to produce the alternative form. That these children possessed the alternative form and not the correct one was demonstrated also by their superior performance on the ungrammatical controls (which used the alternative form) to their performance on the grammatical experimental sentences.

The good learners were also able to perform as well with the ungrammatical noun controls as with the grammatical SVO sentences. The extra burden of footnoting the ungrammatical aspect of the sentence and re-encoding it caused no extra problems for the good learners --their overall competence in processing L_2 was superior to that of the poor learners. They may also have been overgeneralizing the SOV pronoun order (which they possessed in their production grammar to some extent) to these ungrammatical SOV noun structures.

The good learners had the past tense form solidly in their comprehension grammars, and to a great extent in their production grammars as well (C=I>P). On the other hand, the poor learners had the past tense form in their comprehension grammars, but the form was just beginning to emerge in their production grammars (C>I>P).

The difference in performance between the good and poor learners on the pronoun objects may have been attributable to the fact that the good learners were less influenced at this point in their L_2 development by the forms and strategies used in their mother tongue. Perhaps, they began to realize sooner than the poor learners that certain strategies (e.g., SVO processing) may not be applicable in L_2, and began to formulate a new strategy for sentence processing that would work for L_2.

This conclusion could also be made from the results with the noun-adjective structure. This structure does not follow an English word order; adequate performance on such a structure would demonstrate that the

that the influence of the mother tongue was not as important in the processing of this structure. The good learners performed consistently better with the adjectives that followed the noun-adjective word order than did the poor learners on all three tasks.

In addition, there were differences in the kind of translations given by the good and poor learners. The good learners seemed less tied to a word-for-word fashion of translation. Both on the genitive and on the noun-adjective word order, they seemed to be able to translate (both L_1-L_2 and L_2-L_1) into the target language, respecting the word order of the target languages much better than did the poor learners. It is as if these children were encoding and decoding the source and target languages into the correct syntactic units of these language much more than did the poor learners. In other words, when the good learners translated "le chapeau de Jean", they decoded this unit into the two units of the "possessor and the possessed" and encoded it into English in the appropriate manner in which English encodes such a relationship. However, the poor learners seemed to decode, then encode every word sequentially, regardless of the appropriateness of such a technique for either language, resulting in a translation of "the hat of John" rather than "John's hat".

This difference in translation indicates that the good learners seem to be more competent in the second language, because they have the ability to code their second language into larger and more appropriate chunks than do the poor learners. The poor learners seem to be able to code L_2 only into single word units, each word being a French lexical translation of an English equivalent.

The good learners also performed significantly better than the poor learners for the marking of gender, another form that was unique to French. In general, the good learners seem to be at a more advanced stage in their acquisition of L_2 than do the poor learners.

Several characteristics of the good and poor learners have been enumerated here, but the underlying reasons for the apparent faster learning and qualitatively different approach to second language acquisition on the part of the good learners remain relatively unknown.

The important question to ask at this point is whether their

acquisition of French is qualitatively different from the acquisition of the language by other children, or are they just acquiring the language at a much more rapid rate? Similarly, one may ask if the good learners were at one point in their acquisition of French similar to the poor learners, or were they never equally influenced by their mother tongue in their acquisition of L_2? Regardless of whether these differences are qualitative or quantitative, we would like to discover the characteristics of both these groups which underlie the different ways in which these various children acquire a second language. The need for further research in the area is great.

Even if there are some children in the program who speak a more "native-like" French (labelled here as "good" learners), these children may be in jeopardy of changing their "dialect" to the one spoken by the other children. It seems that after a certain point in the immersion program, the language of these children is more influenced by the language of their peers than the language spoken by their teachers. The implications of this possible negative interaction is important for educators to note.

Conclusions

The results of the present study have amply demonstrated how useful imitation can be as a tool for tapping the competence of the second language learner -- especially in the ability of the imitation task to point out the differences between the child's comprehension and production grammars. The present study used only a few syntactic structures; further research could expand upon the number of syntactic structures employed. A longitudinal study using an imitation task might also be attempted, in order to trace the development of many structures in the second language over an extended period of time.

The results of this study also demonstrated how imitation could be used as a means of collecting controlled data on the errors committed by children in the process of learning a second language. These errors are useful both from a theoretical and a practical point of view. Theoretically, they provide data against which different hypotheses about the strategies or methods of second language learning can be tested. Pratically, these

errors provide educators with needed evidence on the kinds of errors children in immersion programs of this kind are making in the process of L_2 acquisition. With a knowledge of these errors, teachers may decide that certain aspects and structures of the language require special remediation. For if these errors are left uncorrected, these children may continue to produce them, particularly because of the reinforcing effect other children's mistakes may have in peer interaction.

Data from imitation also provide useful information on pronunciation and general fluency of the pupils in speaking their second language. The advantage of using imitation as a technique for collecting data comes from the fact that whatever sound or grammatical structures the researcher wishes to look at can be elicited without having to record hours of spontaneous speech in the hope that the child will use a particular sound or grammatical structure. And even after recording hours of speech, if the sound or structure is particularly difficult for the child, it is unlikely that he will use it: spontaneous speech data collected from similar children suggest that speakers of a second language will go to considerable length to avoid the use of a sound or grammatical structure that is particularly difficult for them.

APPENDIX

Experimental Sentences

Form A

Indirect Object Pronoun:

1. Le garçon gros lui montre le manteau de sa maman maintenant.
2. Après le repas ma soeur lui a lancé une petite pomme.
3. Dans le grand magasin de son père Jean-Paul leur donne des oeufs.

Indirect Object Noun:

4. Il donne au chat un bol petit de lait et quelques biscuits.
5. Mon ami français lance une balle au chien près de notre maison.
6. Dans la classe mon frère a montré le ballon bleu aux enfants.

Direct Object Pronoun:

7. Mon frère les a vus sur la table brune après le déjeuner.
8. Marie la soeur de mon ami le place près de la grande chaise.
9. Chez nous après sone dîner notre noir chien le met sous la table.

Direct Object Noun:

10. Elle a mis une pomme verte dans son sac ce matin pour Marie.
11. Il mange beaucoup de soupe dans un bol avec une rouge cuiller.
12. Chaque jour dans la cour de l'école les gros garçons frappent les filles.

Form B

Indirect Object Pronoun:

1. La grosse fille lui donne quelques pommes et des poires après souper.
2. Dans la classe ma soeur leur a montré une chaise rouge et une table.
3. Près de l'école le frère grand de Marie lui lance un chapeau.

Indirect Object Noun:

4. Elle donne à notre chien brun beaucoup de biscuits pour son dîner.
5. Mon amie française montre à ma soeur quelques chats dans la rue.
6. Ce matin une fille a lancé une balle à son petit frère.

Direct Object Pronoun:

7. Maman les a placés sur la table près du bol grand de soupe.
8. Mon amie Marie le met dans un sac noir pour sa maman.
9. Près de notre école le petit garçon les frappe sur le pied.

Direct Object Noun:

10. Il a vu son chapeau sous le bleu manteau de son ami.
11. Dans la verte chaise sa maman mange une pomme après le repas.
12. Maintenant la grande soeur de Jean-Paul met quelques livres dans son sac.

Control Sentences

Form A

1. Mon frère montre lui une balle rouge dans la rue près de notre maison.
2. La fille au garçon a donné quelques pommes vertes ce matin.
3. Maintenant pour notre dîner ma petite soeur met les sur la table.
4. Mon grand frère et ma soeur des oeufs ont mangé pour le souper.

Form B

1. Ce matin une fille de ma classe a montré leur des livres bleus.
2. Maintenant maman au chat montre un grand bol de lait sous la table.
3. Ma soeur place les sur la chaise brune de la maman de Jean-Paul.
4. Mon ami un sac a mis près de la petite chaise chez nous.

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